



NATIONAL MARINE
SANCTUARIES TM

TeamOCEAN Programs
for the
Monterey Bay National Marine Sanctuary
Five Year Report 2000-2005

March 2005

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Ocean Service
National Marine Sanctuary Program



NOAA Ocean Service



MBNMS TeamOCEAN Mission Statement: To inspire and educate sea kayakers and other ocean users about the Monterey Bay National Marine Sanctuary and its wildlife, while promoting respectful wildlife viewing.

Submitted by Lisa Emanuelson and Michele Roest

Table of Contents

Introduction.....	4
The MBNMS's TeamOCEAN Elephant Seal Program.....	5
A. Background.....	5
B. History.....	5
C. Program Staffing and Costs.....	6
D. Results.....	6
E. Summary.....	7
Table 1: Hours/Costs for TeamOCEAN Elephant Seal Program at Arroyo Laguna.....	8
Table 2: Summary of Contacts at Arroyo Laguna.....	8
 The MBNMS's TeamOCEAN Kayaker Outreach Program.....	9
A. Program Staffing.....	9
B. Volunteers.....	10
C. Budget.....	11
D. On The Water Results.....	12
E. Summary.....	14
F. Recommendations for 2005.....	15
1. Volunteer Training.....	15
2. Locations.....	16
3. Budget and Funding.....	16
4. Assessment.....	16
Table 1: 2001-2004 Data for Cannery Row in Monterey, CA.....	18
Table 2: 2001-2004 Data for Elkhorn Slough in Moss Landing, CA...	19
Table 3: 2002-2004 Disturbances of Sea Otters (<i>Enhydra lutris</i>) for Cannery Row in Monterey, CA.....	20
Table 4: 2002-2004 Disturbances of California Sea Lions (<i>Zalophus californianus</i>) for Cannery Row in Monterey, CA.....	20
Table 5: 2002-2004 Disturbances for Harbor Seals (<i>Phoca vitulina</i>) for Cannery Row in Monterey, CA.....	21
Table 6: 2002-2004 Disturbances of Sea Otters (<i>Enhydra lutris</i>) for Elkhorn Slough in Moss Landing, CA.....	21
Table 7: 2002-2004 Disturbances of California Sea Lions (<i>Zalophus californianus</i>) for Elkhorn Slough in Moss Landing, CA.....	22
Table 8: 2002-2004 disturbances for Harbor Seals (<i>Phoca vitulina</i>) for Elkhorn Slough in Moss Landing, CA.....	22
Table 9: Proposed Budget for 2005.....	23

For more information about the TeamOCEAN Kayaker Outreach Program of the Monterey Bay National Marine Sanctuary, contact Lisa Emanuelson at (831) 647-4201 or Lisa.Emanuelson@noaa.gov

For more information about the TeamOCEAN/ Friends of the Elephant Seal Program of the Monterey Bay National Marine Sanctuary, please contact Michele Roest at (805) 927-2145 or Michele.Roest@noaa.gov

Introduction

TeamOCEAN (Team Ocean Conservation Education Action Network) Programs are run in two of the 13 national marine sanctuaries: Florida Keys and Monterey Bay National Marine Sanctuaries. Many sanctuaries have volunteer programs, however these are the only two specifically named as TeamOCEAN Programs. For both sanctuaries the focus of the program is to protect the natural resources found in each location while allowing for a rich and meaningful experience of the visitors to that marine sanctuary. These goals can be achieved in various ways and between these two national marine sanctuary locations, there are three very different modes through which the goals of the program are achieved. For the Florida Keys National Marine Sanctuary (FKNMS), the critical resource needing interpretation and protection is the coral reef ecosystem, which is a very fragile but stationary resource. The TeamOCEAN Program in FKNMS utilizes sanctuary and private boats with trained volunteers to station themselves "... at heavily visited reef sites throughout the Keys during peak recreational boating seasons in order to educate and inform other boaters about the unique nature of the coral reef habitat, share their knowledge of the best approach to certain areas, demonstrate the use of a mooring buoy, and give out various safety information."

For the Monterey Bay National Marine Sanctuary (MBNMS) the resources needing protection are the marine mammal populations finding refuge in kelp forests, rocky outcrops, beaches and estuaries of the MBNMS. This seasonal interpretive naturalist program was designed to provide ocean users with information about the MBNMS, its' programs, natural history of inhabitants and guidelines on how to view these inhabitants respectfully without disturbing them, or changing their natural behavior. MBNMS has two TeamOCEAN Programs; a land based program to raise public awareness about the elephant seal population at Arroyo Laguna and an on the water marine mammal harassment prevention program in Monterey Bay.

TeamOCEAN staff and docents do not write tickets or hand out citations for violations, instead the program encourages proper viewing etiquette through interpretive enforcement. The members of TeamOCEAN Kayaker Outreach Program interact in a friendly, positive, non-confrontational manner to prevent harassment situations while interpreting the sanctuary's resources and answering questions about its' ecology and wildlife.

This five-year summary report is an effort to assess the overall effectiveness of the TeamOCEAN Programs in the Monterey Bay National Marine Sanctuary with attention to the number of people reached, and for the kayak program: which animals are exposed to the most disturbances, and plans for TeamOCEAN Programs in the future.

The MBNMS's TeamOCEAN Elephant Seal Program 2001-2004

Background

The TeamOCEAN Elephant Seal Outreach program is designed to prevent harassment of elephant seals at a major haul out site in the southern region of the Monterey Bay National Marine Sanctuary. Paid contractors work with volunteers in 6 hour shifts on weekends during the elephant seal breeding season, January to March. Since 2001, National Marine Sanctuary staff and contractors have collaborated with the non-profit organization, Friends of the Elephant Seal, in a public awareness campaign at Arroyo Laguna, a popular windsurfing spot, located 6 miles south of Point Piedras Blancas in central California. The program has been effective at reducing harassment of elephant seals, educating local residents, and encouraging safe and responsible wildlife viewing practices.

Program History

The program began as a component of the volunteer-based non-profit organization, the Friends of the Elephant Seal (FES). The organization, formed in 1997, is committed to promoting stewardship and understanding of a large elephant seal colony at Piedras Blancas, and to reducing harassment through education.

In the Fall of 2000, the Monterey Bay National Marine Sanctuary (MBNMS) hired an education specialist to address sanctuary issues in the southern region and promote partnerships with programs such as FES. As the 2001 breeding season approached, FES identified a new pupping site at Arroyo Laguna 3 miles south of the main elephant seal viewing site. Located on private property, Arroyo Laguna is visible and accessible from California State Highway 1. During 1999-2000 elephant seal breeding season, hundreds of people entered the property and harassed the seals.

FES called a meeting with the private landowner, NOAA's Office of Law Enforcement, MBNMS and State Parks to find ways to address the problem. The agreed-upon solution included placement of NOAA signs and "No Trespassing" signs at Arroyo Laguna, increased surveillance by local State Parks rangers, and the placement of "traffic redirectors" at the gate entrance to Arroyo Laguna. Local area residents were advised of proper etiquette when around elephant seals, including keeping safe distances, keeping dogs away, and making efforts to avoid causing changes to elephant seal behavior.

MBNMS and FES representatives work in pairs as TeamOCEAN representatives. When a vehicle pulls into the dirt parking lot at Arroyo Laguna, a Team OCEAN representative approaches the vehicle and directs the driver and passengers to proceed 3 miles north to the designated viewing area. The driver is also advised that elephant seals are protected by federal law, and that Arroyo Laguna is a problem spot patrolled regularly by law enforcement. A tally of contacts is reported on a data sheet. All people in the car are considered “contacts.”

The program begins the first weekend in January and continues to the second weekend in March, when all the pups have been weaned. Two Monday holidays (Martin Luther King, Jr. Day and President’s Day) are also staffed. If weaning is completed before March 15, then the program is terminated early.

Staffing & Costs

FES docents donate their time as part of their ongoing commitment to protect the elephant seals and safely enhance the public’s enjoyment. However, docent resources are focused on interpretation and harassment prevention at the designated viewing area, Vista Point 3, during the peak pupping season, and there are not enough docents to cover all the shifts at Arroyo Laguna.

Since the TeamOCEAN program’s inception, MBNMS has provided trained contractors and staff to assist with the program. Staff handle the scheduling duties, hire and train contractors and oversee the program. Contractors undergo a 4-hour paid training meeting prior to participating in the program. Contractors are paid \$10.00 per hour and work in teams, paired with FES docents. A summary of hours contributed by volunteers and contractors, as well as the costs to MBNMS for the program are outlined in Table 1.

Results

The results of the program show thousands of people come to Arroyo Laguna, many with the belief it is the designated elephant seal viewing site. From past experience, it is likely a significant number of these people would approach the elephant seals and cause harassment incidents. “Redirecting” these tourists to the designated elephant seal viewing site enhances the visitor’s enjoyment of their experience while it significantly reduces harassment risk to the seals.

Over the past four years of this TeamOCEAN program a steady increase in contacts until 2004 is seen, Table 2. The total contacts decreased significantly from 5,191 in 2003 to 3,639 in 2004. A number of factors may account for this drop including the TeamOCEAN Elephant Seal Outreach Program itself. Throughout the four years the program has been operating a number of people have been contacted, both tourists and locals. While tourists account for the majority of the contacts made, local area residents may play a significant part in keeping anyone from pulling off at the Arroyo Laguna site. In the first years of the program, even after contact with TeamOCEAN volunteers, many visitors to the site would still climb over the fence and trespass on private property to

view the elephant seals up close, or enter the water for windsurfing or surfing. Over these more recent years local area residents, windsurfers and surfers have discontinued using the Arroyo Laguna site during the peak elephant seal season. Without a number of cars parked at the Arroyo Laguna site tourists may be less motivated to stop at the Arroyo Laguna site and instead continue north to the main viewing area at Vista Point 3.

Over the four years of the program an increase in the presence of law enforcement personnel that have given out citations and warnings to locals and tourists has increased knowledge in the area of the Elephant Seal Outreach Program and regulations concerning the Arroyo Laguna site. Additionally volunteers followed with binoculars anyone who crossed the private property to get to the beach. This caused some to return to their cars, possibly worried about receiving a citation for harassing the elephant seals.

Summary

At a follow-up meeting after the 2001 elephant seal breeding season, all participants agreed the program significantly reduced harassments to elephant seals and number of citations issued during the sensitive pupping season. The NOAA and “No Trespassing” signs were effective at deterring tourists as long as elephant seals were not visible from the road. When elephant seals were visible, their presence was compelling enough to draw tourists over the gate despite the signs. The signs alone did not deter local residents nor individuals who were highly motivated to get close to the seals. Contacts by TeamOCEAN volunteers and contractors resulted in nearly all visitors departing the area.

A great deal of local public education was achieved regarding safe viewing of elephant seals. A long-term benefit of the “redirection program” was the education and involvement of the local surfing community. Surfers and windsurfers who frequented Arroyo Laguna observed the program and heard what the TeamOCEAN representatives told visitors. They then became leaders and educators themselves, giving the message to other visitors when the program was off-season. On two occasions, unidentified scientists crossing the area to count seals were approached by surfers and advised to stay away.

The increased presence of law enforcement also had a significant impact on the success of the program. While most tourists willingly moved to the designated elephant seal viewing site, some people came to Arroyo Laguna specifically to get close to the seals. When informed law enforcement personnel were patrolling the area, they usually left. The increased visibility of Highway Patrol, Sheriff, State Parks, California Department of Fish and Game and NOAA vehicles was a significant deterrent to people with the intent to approach and harass elephant seals.

This TeamOCEAN program effectively reduces harassment of elephant seals and provides education to the public. While law enforcement presence is necessary in the area during the elephant seal pupping season, direct contact by trained docents and contractors reduces law enforcement time and expenses.

Table 1: Hours/Costs for TeamOCEAN Elephant Seal Program at Arroyo Laguna

Year	Dates	Number of Days	Total Hours	FES Volunteer Hours	MBNMS Contractor Hours	MBNMS Costs
2001	1/25-3/10	13	156	78	78	\$ 780.00
2002	1/6-3/13	21	262	98	164	\$1,640.00
2003	1/4-3/2	20	248	85	163	\$1,630.00
2004	1/3-3/15	24	297	88	209	\$2,090.00
Total		78	945	349	614	\$6,140.00

Table 2: Summary of Contacts at Arroyo Laguna, 2001-2004

Year	Dates	Number of Days	Number of Contacts	January Average	February Average	March Average
2001	1/25-3/10	13	2,000	225*		
2002	1/6-3/13	21	3,900	230	201	42
2003	1/4-3/2	20	5,191	304	293	198
2004	1/3-3/15	24	3,639	162	231	63
Total		78	14,730	230	241	101

*Monthly averages were not recorded in 2001.

The MBNMS's TeamOCEAN Kayaker Outreach Program 2000-2004

Background

The TeamOCEAN Kayaker Outreach program is a program designed to give one-on-one information to sanctuary users on proper wildlife viewing etiquette and general sanctuary information. Four paid staff lead a group of volunteers during each 6 hour shift, 3 times a week in two locations, Elkhorn Slough in Moss Landing and Cannery Row in Monterey, CA. During shifts both volunteers and staff collect information about reasons for interactions with sanctuary users, types of animals disturbed, how many animals and what type of disturbance, if any, is seen. Dedicated staff and volunteers provide a critical link between sanctuary regulations and users in a personal and caring manner without the need for tickets or law enforcement intervention. The program has been in operation since 2000 and continues to grow each year with more volunteers and more sanctuary users contacted.

Program Staffing

At the program's inception in 2000 a brief pilot study was undertaken with 2 staff members from October 14th until November 4th. A total of 12 interactions were noted and at that time a recommendation to operate the program during the peak tourist season (June to September) over weekends was suggested to interact with the most on-the-water traffic. By TeamOCEAN's second season, three paid staff (although, one did not complete the season) were on the water from August through September, Friday through Monday, and were able to contribute 328 person hours to TeamOCEAN goals of information and interpretation on the water. In 2002, the number of staff was increased to 4 to give some flexibility to staff persons while still working Friday through Sunday. One staff position per season was also designated as the Team Lead who was paid for additional duties. The Team Lead was responsible for scheduling of staff and volunteers, equipment maintenance, and end of the season inventory and packing. The paid staff of 4, worked with trained volunteers (from 1-3 at a time), to patrol areas known to have marine mammals such as Sea Otters, Sea Lions, and Harbor Seals. The volunteers and staff were trained to interact with other ocean users in a courteous and respectful way with the assumption most kayakers and ocean users, in general, care deeply about the ocean environment and do not understand the concerns in regards to wildlife disturbance and how it can be avoided while still allowing for a rich experience in wildlife viewing.

A Monterey Bay National Marine Sanctuary staff person, Jen Jolly, who left the National Marine Sanctuary Program mid 2003, had overseen the first 3.5 years of the TeamOCEAN Program. Lisa Emanuelson took over supervision of the TeamOCEAN Program completing the 2003 season and overseeing the 2004 season.

Volunteers

The first full season of the TeamOCEAN Kayaker Outreach Program in 2001 had 2 paid personnel. At the end of that 2001 season it was obvious that to cover the two most heavily kayaked areas more personnel would be necessary. Due to budgetary constraints, no new paid staff could be brought on but a volunteer program was suggested for the following season. With the addition of a volunteer corps, more people could be contacted through on-the-water interactions and additional knowledge about the sanctuary could spread. After recruitment and interviews, 9 new enthusiastic volunteers from San Francisco to Santa Barbara joined the TeamOCEAN Kayaker Outreach Program in 2002. Volunteers participate in the same rigorous training staff do and are expected to commit to one 6 hour shift per month. Volunteers have the same responsibilities and duties as the paid staff, and are always paired with paid staff. The addition of these volunteers made possible an increase in coverage on the water from a total of 328 person hours in 2001 to 549 in 2002 and an increase in the number of people reached from 1849 in 2001 to over 3500 in 2002. The volunteer program continued to grow and in 2003 with 25 volunteers on the roster a total of 1220 person hours and 6586 people contacted.

Recruiting for volunteer staff for the 2004 season began in April with an informal talk for interested volunteers on April 20, 2004. This was an informational meeting for interested volunteers to find out about the program, ask questions and sign up for training; approximately 50 people attended with 40 signing up for the training sessions. The volunteers in training received 12 hours of classroom instruction on 4 Tuesdays in May. Lecture topics included: An overview of the Monterey Bay National Marine Sanctuary, birds of the Monterey area by Hannah Nevins from Moss Landing Marine Lab, marine mammals of the Monterey area, a presentation by NOAA Law Enforcement Officer Bob Yerena on regulations and the enforcement role of volunteers, radio and safety procedures, how to fill out the data sheets, an introduction to Elkhorn Slough by Jacquie Kourassis of ESNERR, and interpretation techniques. Lectures were open to volunteers from previous years as well to allow them to brush up on information and skills in preparation for a new season. As in previous years, the volunteers also received a kayak safety/training class donated either by Monterey Bay Kayaks or Jan Shriner of Peaceful Paddling. The class covered topics such as proper paddling, proper orientation to waves, self bail-outs, and partner assists. The safety class was an all day on the water class after which the students received a certification card, certifying their participation and acceptable performance of the required skills. In May 2004, 36 new volunteers joined the TeamOCEAN Kayak Outreach Program roster, contributing to a total of 1020 person hours on the water and 5173 people contacted. Of the 520 total volunteer hours, 85% were fulfilled by new TeamOCEAN volunteers, 14% from volunteers from the previous year, and 5% by a single volunteer with the program since 2001 (Tables 1 and 2).

In informal discussions with volunteers, over all satisfaction with all aspects of the training program were communicated. A few ideas for improving the training were given and are noted below in Recommendations for 2005.

Budget

As with many programs of this type where there is a large equipment base, and the budget for the first two years was much higher than in successive years. Fortunately, in the first two years of the program's operation, kayak manufactures Kokotat and Perception donated \$9,500 worth of kayaks and gear. In 2002 another \$1,500 was donated to the program in the form of kayak skills classes for staff and volunteers. In 2002 the budget for the program was \$18,300 with the majority going to staff salaries. The 2003 and 2004 seasons did not have any large equipment expenses for the program and therefore received a total budget of \$14,500 which covered the 4 paid staff positions and kayak stenciling of NOAA logos and lettering. Donations to the program in 2003 totaled over \$5,000 from Eskape Kayaking (\$340 in safety classes), Monterey Bay Kayaks (\$1,140 in safety classes and \$2,632 from Paddle Fest), The Otter Project (\$1,000) and Peaceful Paddling (\$425 in safety classes). Welcome donations to the TeamOCEAN Kayaker Outreach Program for 2004 came from Monterey Bay Kayaks (\$2,000 in safety classes and \$2,500 in boat storage), Peaceful Paddling (\$400 in safety classes), The Otter Project (\$800), Bay Watershed Education and Training (BWET) Grant Fund (\$1,000).

The National Marine Sanctuary Foundation (NMSF) and the Monterey Bay Sanctuary Foundation (MBSF) acted as fiscal agents for these donated funds. These donations made it possible to purchase some necessary pieces of equipment: two new storage lockers and locks for equipment, natural history books for volunteers, waterproof paper for data sheets, new ID cards for the kayakers, and end of the season thank you gifts. Four sit on top kayakers were purchased from Monterey Bay Kayaks with a donation from the Bay Watershed Education and Training Grant Fund. For the past three years the TeamOCEAN program has had a volunteer corps. Volunteers have donated a total of 1,232 hours at a value of over \$12,000. The Monterey Bay National Marine Sanctuary is committed to the TeamOCEAN Kayaker Program, these donations of time and money along with financial backing from the sanctuary make for a robust and incredibly successful program.



TeamOCEAN staff and volunteers paddle the waters in Elkhorn Slough ESNEER.



TeamOCEAN members interact with other sanctuary users to educate and inform about sanctuary regulations and proper wildlife viewing etiquette.

On The Water Results

While TeamOCEAN's primary goal is to educate sanctuary users, team members have been able to collect useful data over the past number of years, (see Tables 1 and 2). Unfortunately, the first year the TeamOCEAN Kayaker Outreach Program naturalists were on the water (2000) the data was not collected in a quantifiable format, which makes any comparison to future years difficult. For 2001, data was also collected in an anecdotal manner without information about how many animals were disturbed or what sort of behavior was observed, therefore the totals listed in Table 1 are estimates only based upon time spent at each location. Data collection in 2002 was more quantifiable with date, location, species of animal involved, number of animals involved, reaction to disturbance noted in four behavior types: head raise, flee with out diving, flee with diving, and flush. For the past two years (2003 and 2004) volunteers and staff collected data using the same text as in 2002 but on a data sheet developed for the program allowing for easy recording of animal species, observed behavior, number of individuals exhibiting a specific behavior, user types, interaction types, and qualifying whether the interaction with users was positive or not. Behaviors noted in the data sheets are:

- Head raise- where animal(s) raises only the head when alerted. This is considered a mild reaction to a disturbance.
- Flees with out diving- where animal(s) swims away, may or may not keep an eye on the reason for swimming away.
- Flees with diving- for animal(s) already in the water, dives to get away from cause of disturbance.
- Flush- for animal(s) out of water that rush into water to get away from cause of disturbance. This is considered a severe reaction to a disturbance.

Over the course of these past 5 years, the TeamOCEAN Kayaker Outreach Program naturalist staff and volunteers have approached a total of 17,138 people both on the water or on land. The vast majority of people contacted have been kayakers with rentals far out numbering private kayaks. For the years where data is available, interactions rental kayakers far exceeded those of private kayakers. An average of 71% of Elkhorn Slough interactions were with rentals and in Monterey the total jumps to 84%. Totals from individual years have fluctuated from one year to the next with records from 2002 showing the lowest numbers of users overall. Other common users to the sanctuary interacting with Team OCEAN naturalists in these two areas for the past three years are private kayakers (Monterey 12%, Elkhorn Slough 26%), boaters (Monterey 1%, Elkhorn Slough 2.3%) and pedestrians (Monterey 2%, Elkhorn Slough .6%).

Overall, the highest number of interactions Team OCEAN Kayak Outreach Program naturalists made were for informational purposes. On Cannery Row in Monterey, TeamOCEAN naturalists provided basic interpretation of resting sea otters, hauled out harbor seals, and rafting or hauled out sea lions. The team also provided important information on boating lanes, potential collision hazards and off limit areas such as Hopkins Marine Station. In Elkhorn Slough, TeamOCEAN naturalists provided information and interpretation of harbor seals, sea otters, seabirds and off limits areas within the Elkhorn Slough National Estuarine Research Reserve. In 2002, interactions for general information purposes were Monterey 90% and Elkhorn Slough 91%. In 2003

this trend continued with Monterey 90% and Elkhorn Slough 94%. For 2004 informational interactions totaled 89% in Monterey and 94% in Elkhorn Slough.

Other types of interactions Team OCEAN Kayak Outreach Program naturalists engaged in were to prevent a disturbance by sanctuary users appearing to approach wildlife too closely. These interactions were often instigated to specifically head off the user before a disturbance occurred. In 2002, 7% of interactions in Monterey were to prevent an imminent disturbance, 2003 posted 6% and 2004 recorded 4%. In Elkhorn Slough interactions to prevent disturbances in 2002 consisted of 4%, 2003 recorded 5%, and 2004 saw 3%. Most TeamOCEAN naturalists are quite expert at positioning their kayak in such a way as to prevent a disturbance from occurring, especially in Elkhorn Slough where the Harbor Seals regularly haul out on one specific beach.

The last major category of interactions the Team OCEAN Kayak Outreach Program naturalists have recorded over the years is an observed disturbance. For the year 2002 Elkhorn Slough had 5% resulting from observed disturbances, 1% in 2003 and finally 2% in 2004. For Monterey the number of interactions post-disturbance has remained a constant 4% for the past three years.

In looking at the number of disturbances each year as a percentage of the total number of people contacted a trend emerges. For Cannery Row, the total of disturbances noted as a function of the total number of people contacted shows a trend upward from 1.8% in 2002, to 2.1% in 2003 and 2.6% for 2004. Conversely for Elkhorn Slough the trend is in the opposite direction; 1.99% in 2002, 1.76% in 2003 and 1.71% in 2004.

The most common marine mammals to be disturbed differ for each location. Cannery Row has an extensive kelp bed where many sea otters look for refuge and food. Disturbances to otters from mild reactions (head raising) to severe (flushing from the scene) totaled 106 in the past 3 years (Table 3). The majority of these disturbances were head raises (68%), and considered to be a fairly mild reaction to the close proximity of people; within the past 3 years 2004 was the year with the lowest number of animals exhibiting head raises (by 42 animals). Looking at individual years and the total number of sea otters disturbed each year: In 2002 the number of sea otters being disturbed (mild to severe) was 107 individuals with a total of 24 distinct disturbance events noted; In 2003 the number of individuals being disturbed dropped slightly to 100 with 42 disturbance events; And in 2004 the number of individuals being disturbed dropped to 57 with 40 disturbance events being noted. While otters also find food and shelter in Elkhorn Slough, their numbers do not reach the Cannery Row level. The level of disturbance of the otters in Elkhorn Slough is higher than Cannery Row with more otters exhibiting a fleeing with diving response (3) than the popular head raise (1) for Cannery Row (Table 6).

Harbor seals are the marine mammals most disturbed in Elkhorn Slough, with a total of 81 disturbance events (mild to severe) over the past 3 years (Table 8). The harbor seals in Elkhorn Slough commonly haul out at an area known as Seal Bend, which is accessible by both water and land and makes the seals quite visible. This vulnerability perhaps contributed to the number of disturbance events over the years with head raising the most common (69%). For overall disturbances (mild to severe) of harbor seals in Elkhorn Slough the past three years have been: 17 disturbances in 2002 involving 180

individuals, 37 disturbances in 2003 involving 216 individuals, and lastly 27 disturbances in 2004 involving 397 individuals. Unfortunately, 2004 had the highest number of animals disturbed enough to flush (234) but the lowest number of flushing events (8) pointing to a greater number of animals flushed in each disturbance event. Harbor seals are not commonly disturbed in the Cannery Row location, the most common disturbance was head raise at 100% for 2004 and only one flush in the 3 years for which data was collected (Table 5).

The third most common, easily observed marine mammal in this area is the California sea lion. In Monterey, the Coast Guard jetty is a haul out for many sea lions and over the course of the past 3 years only 23 disturbance events (mild to severe) have been noted with flushing the most common (69%), (Table 4). The highest number of animals disturbed was in 2002 with 180 animals involved in 8 disturbance events, 7 of which were complete flushings of 175 animals total; in 2003 the total number of animals disturbed was 34 involving 6 disturbance events; in 2004, 36 animals were involved in 9 disturbance events. Elkhorn Slough only had 5 disturbance events involving 15 sea lions over the past 3 years, 2003 was the only year that any disturbance was noted (Table 7).

Summary

The TeamOCEAN Kayaker Outreach Program has proven to be an effective outreach tool for the Monterey Bay National Marine Sanctuary. By reaching over 17,000 people in the past 5 years, TeamOCEAN staff and volunteers have increased knowledge of the sanctuary, the sanctuary's inhabitants and proper viewing etiquette for these inhabitants. There is no other outreach program reaching this many people in the MBNMS. While the number and percentages of interactions from Cannery Row point to a lowering of the number of informational interactions and an increase in the number of disturbances seen over the past 5 years, it is not certain whether this is a significant drop or not. Conversely the numbers of informational interactions for Elkhorn Slough have shown an increase along with a drop in the number of disturbances noted, again these trends require further study to determine their significance. There is undeniable resource protection benefit of the program by preventing numerous wildlife disturbances and educating those who might potentially disturb wildlife needlessly. By being the face of the sanctuary on the water and interacting with sanctuary users directly, TeamOCEAN kayakers provide a necessary educational link between sanctuary regulations to the actual users of the sanctuary itself.

TeamOCEAN kayak naturalists also provide a link to local kayak shops working closely with the TeamOCEAN Program to provide information and orientation on proper wildlife viewing etiquette. Further work with kayak shops and independent researchers has produced a wildlife viewing kayak card that has been handed out to all shops renting kayaks in the Monterey and Elkhorn Slough areas. Additionally a poster-sized version of the wildlife card was posted at Monterey Bay Kayaks as a pilot display of the card at two kayak and small boat launching areas. With more exposure to proper viewing techniques local wildlife can only benefit, especially in the off-season when the TeamOCEAN Kayaker Outreach Program naturalists are not on the water.

In conclusion, the TeamOCEAN Kayaker Outreach Program has been incredibly successful. It's continued operation only increase knowledge about the Monterey Bay National Marine Sanctuary through personal one on one interactions designed to give fellow sanctuary users insight and information into proper wildlife viewing etiquette. The program continues to grow year after year in both number of sanctuary users contacted and number of volunteers involved in educating these sanctuary users. We recommend that the Team OCEAN Kayaker Outreach Program be continued through this next management plan cycle.

Recommendations for 2005

Over the past 5 years data has been collected which allows us to assess and improve the program for future years. Recommendations for the program are given below in order to improve staff and volunteer training, increase the number of locations patrolled, and budgetary concerns.

Volunteer Training

Many volunteer programs in the Monterey area compete for volunteers to staff programs. The TeamOCEAN Kayaker Outreach Program offers something most other volunteer programs in this area do not: a way to be on the water interacting with the public in a very unusual and meaningful way. Even with this exceptional opportunity the TeamOCEAN Program loses more than half of its volunteers from one year to the next. Only the most dedicated and interested volunteers stay year after year. In order to attract and keep volunteers for more than one season, the program needs to offer more in depth training and other volunteer opportunities in the kayaking program's off season.

For the past few years training has been 12-18 hours including a kayak safety class. For this next year it is suggested training start earlier in the year (March instead of May) but be less time for each class time (2 hours instead of 3). This reduction in time will help volunteers participate in the program by allowing more time to get to the lecture site, more time to assimilate material and not so many late nights. Additionally training will include field trips to work on marine mammal ID, bird ID, and invertebrate ID. Monterey Bay Kayaks has generously offered to donate time for interested volunteers to go out on kayaks prior to the kayak safety class in order to become more familiar and comfortable with kayaking. The in-class training would total 20 hours with additional field trips and kayak days totaling another 20-30 hours. This will help to more completely train volunteers and will also help in retaining them from year to year due to a greater investment of time and a feeling of ownership in the program. More time spent learning and becoming a member of the team will translate into more connectedness to the TeamOCEAN Program and volunteers returning from year to year.

Another consideration is a partnership between TeamOCEAN and another local volunteer program. A partnership could be developed allowing members of the program to easily shift between duties on kayak with onshore duties, for example as part of BayNet or the Elkhorn Slough Natural Estuarine Research Reserve. Volunteers in the months between

October and May could work in other capacities while still keeping their focus and skills fresh for the TeamOCEAN Kayaker Outreach Program from May to October.

Locations

As kayaking grows in popularity, so does the possibility of wildlife disturbance. This year's donation and purchase of four sit-on-top boats will allow the program to patrol other areas to prevent wildlife disturbances. Two new areas to consider are: Lover's Point and Cove and Santa Cruz. A kayak rental shop at Lovers Cove along with easy access for private kayaks makes the otters and harbor seals from Hopkins Marine Station to Otter Cove especially vulnerable. Infrequently, TeamOCEAN volunteers will paddle this extra distance from the area in front of the Plaza Hotel (Cannery Row), it is much farther than many people can do in one day and get back to MBK at Del Monte Beach. For 2005, a pilot assessment of this area should be considered.

In the first year of the program, 2000, some work was done in Santa Cruz to assess the need for a Team OCEAN Kayaker Outreach Program. At that time it was decided that the program could better serve the public at Elkhorn Slough and Cannery Row. However with the purchase of new boats and communicated interest in a Santa Cruz program by potential volunteers, it is suggested Santa Cruz be assessed again as a location for expansion of the Team OCEAN Kayaker Outreach Program. The assessment should address not only areas of marine mammals, but what sort of disturbances are observed by which user groups and the amount of kayak rentals occurring in the area.

Budget and Funding

With more boats and a possible expansion of the program to Santa Cruz or Lover's Cove, more equipment will be necessary: wetsuits, paddle jackets, waterproof radios, cellular phones, life jackets, etc. This report includes a proposed 2005 expansion budget (Table 9).

Contracts for the kayaking staff, including the Team Lead should be handled through the Monterey Bay Sanctuary Foundation (MBSF). This same recommendation was made in previous years but was not carried out and this last year, 2004, the lack of payment through WASC for kayak staff caused quite a bit of frustration and financial hardship for the staff members. This will potentially cause some staff to not return to the program, which will effect the program's operation. In the future, contracts should be handled through the MBSF to efficiently expedite payment for these hard working, dedicated staff.

Assessment

In order to more clearly define TeamOCEAN's effectiveness at helping to decrease intentional and unintentional wildlife harassment a few assessment tools will be implemented for the 2005 season: 1. Land based volunteers will track kayakers after they have interacted with TeamOCEAN volunteers to see if they exhibit good wildlife viewing etiquette. 2. Anonymous surveys in kayak shops and rental facilities will ask kayakers if

they have interacted with a member of TeamOCEAN and whether that interaction increased their knowledge of the MBNMS, wildlife viewing etiquette, and/or natural history of local wildlife.

Table 1: 2001-2004 Data for Cannery Row in Monterey, CA

	2000	2001	2002	2003	2004	Total
Number of days on the water	22 b/t M & ES	16.5	31	42	48	137.5
Number of hours on the water		180.4	269	612	583	1644.4
Number of volunteer hours			83	383	320	786
Number of approaches	9	679.25	695	1301	1160	3835.25
Number of people approached		1017.5	1671	3226	2901	8815.5
Interaction reason types		*				
Informational			617	1139	1031	2787
Prevent disturbance	4		45	96	75	216
Saw disturbance	5		25	50	51	126
Saw disturbance but no approach				10	12	22
Number of disturbances noted	5	*	30	68	77	145
Enforcement calls		7 other agencies	1	1	0	9
Types of ocean users		*				
Rental Kayaks	7 incidents		589	1065	960	2614
Private Kayaks	2 incidents		59	163	147	369
Pedestrians				35	26	61
Boaters			6	14	12	32
Canoe			0	0	0	0
Divers			3	14	6	23
Kayak Divers			9	5	1	15
Jetskis			1	1	0	2

* data not collected

Table 2: 2001-2004 Data for Elkhorn Slough in Moss Landing, CA

	2000	2001	2002	2003	2004	Totals
Number of days on the water	22 b/t M&ES	13.5	30	51	49	143.5
Number of hours on the water		147.6	280	454	436	1317.6
Number of volunteer hours			80	166	200	446
Number of approaches	3	555.75	714	1241	910	3420.75
Number of people approached	*	832.5	1858	3360	2272	8322.5
Interaction reason types		*				
Informational			648	1130	860	2638
Prevent disturbance			27	57	28	112
Saw disturbance	3		35	11	21	67
Saw disturbance but no approach				13	17	30
Number of disturbances noted	3	*	37	59	39	135
Enforcement calls		3 other agencies	1	1	1	6
Types of ocean users		*				
Rental Kayaks	1 incident		519	959	631	2109
Private Kayaks	2 incidents		169	318	270	757
Pedestrians				12	6	18
Boaters			9	21	37	67
Canoe			0	14	0	14
Divers			1	0	0	1
Kayak Divers			1	0	0	1
Jet skis			0	1	0	1

* data not collected

Table 3: Disturbances of Sea Otters (*Enhydra lutris*) for Cannery Row in Monterey, CA

Sea Otters	2002	2003	2004
Total # of head raises	12	32	28
Total # of animals showing head raises	57	70	42
Total # of flees w/o diving	4	2	4
Total # of animals showing fleeing w/o diving	11	5	4
Total # of flees with diving	7	5	6
Total # of animals showing fleeing with diving	29	10	9
Total # of flushes	1	3	2
Total # of animals showing flushes	10	15	2
Total # of animals disturbed	107	100	57
Total # of disturbances of all types	24	42	40
Average # of animals disturbed each time	4.46	2.38	1.43

Table 4: Disturbances of Sea Lions (*Zalophus californianus*) for Cannery Row in Monterey, CA

Sea Lions	2002	2003	2004
Total # of head raises	0	2	2
Total # of animals showing head raises	0	3	6
Total # of flees w/o diving	0	0	1
Total # of animals fleeing w/o diving	0	0	1
Total # of flees with diving	1	1	2
Total # of animals fleeing with diving	5	2	10
Total # of flushes	7	3	4
Total # of animals showing flushes	175	29	19
Total # of animals disturbed	180	34	36
Total # of disturbances of all types	8	6	9
Average # of animals disturbed each time	22.5	5.67	4

Table 5: Disturbances of Harbor Seals (*Phoca vitulina*) for Cannery Row in Monterey, CA

Harbor Seals	2002	2003	2004
Total # of head raises	1	15	16
Total # of animals showing head raises	1	24	36
Total # of flees w/o diving	0	0	0
Total # of animals fleeing w/o diving	0	0	0
Total # of flees with diving	0	0	0
Total # of animals fleeing with diving	0	0	0
Total # of flushes	0	1	0
Total # of animals showing flushes	0	1	0
Total # of animals disturbed	1	25	36
Total # of disturbances of all types	1	16	16
Average # of animals disturbed each time	1	1.56	2.25

Table 6: Disturbances of Sea Otters (*Enhydra lutris*) for Elkhorn Slough in Moss Landing, CA

Sea Otters	2002	2003	2004
Total # of head raises	1	0	1
Total # of animals showing head raises	2	0	1
Total # of flees w/o diving	0	3	0
Total # of animals showing fleeing w/o diving	0	3	0
Total # of flees with diving	7	3	3
Total # of animals showing fleeing with diving	11	3	3
Total # of flushes	0	0	0
Total # of animals showing flushes	0	0	0
Total # of animals disturbed	13	6	4
Total # of disturbances	8	6	4
Average # of animals disturbed each time	1.63	1	1

Table 7: Disturbances of California Sea Lions (*Zalophus californianus*) for Elkhorn Slough in Moss Landing, CA

Sea Lions	2002	2003	2004
Total # of head raises	0	3	0
Total # of animals showing head raises	0	13	0
Total # of flees w/o diving	0	0	0
Total # of animals showing fleeing w/o diving	0	0	0
Total # of flees with diving	0	0	0
Total # of animals showing fleeing with diving	0	0	0
Total # of flushes	0	2	0
Total # of animals showing flushes	0	12	0
Total # of animals disturbed	0	15	0
Total # of disturbances	0	5	0
Average # of animals disturbed each time	0	3	0

Table 8: Disturbances of Harbor Seals (*Phoca vitulina*) for Elkhorn Slough in Moss Landing, CA

Harbor Seals	2002	2003	2004
Total # of head raises	11	29	16
Total # of animals showing head raises	112	157	158
Total # of flees w/o diving	1	0	2
Total # of animals showing fleeing w/o diving	1	0	4
Total # of flees with diving	1	0	1
Total # of animals showing flees with diving	1	0	1
Total # of flushes	4	8	8
Total # of animals showing flushes	66	59	234
Total # of animals disturbed	180	216	397
Total # of disturbances	17	37	27
Average # of animals disturbed each time	10.59	5.84	14.7

Table 9: Proposed Budget for 2005

Item	Cost	Lovers Cove (expansion)	Monterey/ES
Life jackets	\$60 ea	\$420	
Wetsuits	\$80 ea	\$560	
Paddle Jackets	\$70 ea	\$490	
Stenciling for lifejackets		\$425	
Waterproof Radio	\$350 ea	\$350	
Cell Phone	\$33/mo	\$200	
Cell Phone Bag		\$20	
Binoculars	\$200		
ID Sheets	\$10/set	\$40	\$110
Locker(s)	\$200/set	\$200	
Kayak Locks	\$15		
Stenciling for kayaks		\$994	\$366
Hats			
Books			
Totals (approx)		\$3699	\$476